

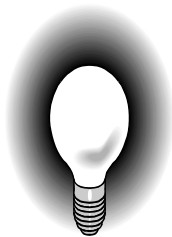
# TECHNICAL FACT SHEET FOR LIGHTING PRODUCTS CONTAINING MERCURY

## EPA PARTNERSHIP AND YOU...

The United States Environmental Protection Agency (EPA) has identified numerous persistent, bioaccumulative and toxic (PBT) chemicals that may be present in some industrial hazardous wastes regulated under the Resource Conservation and Recovery Act (RCRA). In addition to its ongoing regulatory activities, EPA will focus voluntary efforts on actions that reduce the generation of these PBT chemicals. EPA will also work with states, industry, and environmental groups through workshops, technical assistance programs, partnership agreements, regulatory reinvention projects, and other strategies to promote progress toward the goal of reducing the generation of RCRA PBT's in hazardous waste by 50 percent by the year 2005.



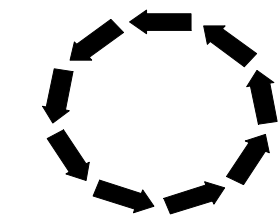
## MERCURY LIGHTING



Mercury is found in fluorescent, mercury vapor, metal halide, high-pressure sodium vapor and neon lamps. These lamps are used both indoors and outdoors in heat lamps, photography, photochemistry, water purification and street lighting. Lamps containing mercury become hazardous to human health and the environment if they are broken in a manner that allows the mercury to escape into the environment.

RCRA is the federal regulation governing hazardous waste. RCRA regulations prohibit the disposal of waste lamps and light bulbs in sanitary landfills if they contain levels of heavy metals (i.e., mercury) that exceed hazardous waste limits. Companies should check with their associated state agency relating to hazardous waste disposal since each state may have different or more stringent regulations. The disposal of mercury-containing hazardous waste is regulated in 40 CFR Part 261 under the heading "Identification and Listing of Hazardous Wastes". Other information on how to dispose of mercury lamps under the Universal Waste Rule is found in 40 CFR Part 273.

Although fluorescent lighting contains mercury, it is still the preferred choice since it uses less energy than other types of lighting. Efforts should be made, however, to use fluorescent bulbs that contain low amounts of mercury. Today, a standard fluorescent lamp contains between 20 to 50 mg/tube of mercury, depending on the bulb size. This is approximately 0.02 percent of the total weight of the bulb.



Mercury is one of the PBT chemicals identified as a priority. Mercury cycles in the environment as a result of both natural and human activities. Once it is released into the environment mercury will remain there indefinitely. One of the reasons that mercury has been listed as a PBT is that some forms of mercury can bioaccumulate in the flesh of certain fish which could then be ingested by humans. Mercury is also toxic to humans and can severely damage the brain, kidneys, developing fetuses or even cause death.

## ADVANTAGES OF MANAGING YOUR LAMPS AS UNIVERSAL WASTE

Some of the advantages of managing your lamps as universal waste are:

- ▶ Universal waste does not count towards your monthly hazardous waste generator totals.
- ▶ No manifesting is required.
- ▶ Record keeping and reporting requirements are reduced or eliminated.
- ▶ Handlers can receive and consolidate universal waste without a storage permit.
- ▶ Accumulation time limits are increased.

## MEASURE YOUR SUCCESS

Many companies have benefitted by replacing their high energy mercury lighting, and simply using the available environmentally friendly alternatives. Here are some success stories for several companies that have switched to alternative lighting sources:

- ▶ One company intends to replace roughly 13,500 400W mercury lamps with sodium vapor lamps, increasing the efficiency 52 percent. This investment should be paid for in approximately 8 months.
- ▶ The Smithsonian National Air and Space Museum replaced their mercury lighting with sulfur lamps, increasing light levels by 300 percent. Energy consumption has been decreased by 25 percent and retrofitting costs were less than 50 percent the cost of upgrading.
- ▶ Another company substituted low-level mercury lamps for the high-level mercury lamps, therefore eliminating over 3,500 lb. of hazardous wastes per year. A cost savings of \$5,800 a year with a 0.1 year payback time was achieved.
- ▶ A building in the Department of Energy replaced their mercury vapor lamps with sulfur lamps and increased the light levels by 400 percent, while reducing their energy usage by 65 percent.

## FOR MORE INFORMATION...

There are various resources to locate more information on the substitution and potential elimination of mercury from your workplace. Here are just a few of the Web sites available via the Internet and government agencies listings that would be able to provide more information.

### *Web sites*

- www.epa.gov/osw/index.htm
- www.epa.state.il.us/land/fluorescent-lamps
- www.state.in.us/idem/olq/publications/guidance/Universal\_Waste\_Rule\_Info.pdf
- www.deq.state.mi.us/wmd/HWP/hwtypes.html
- www.pca.state.mn.us/waste/pubs/business.html
- www.epa.state.oh.us/dhwm/factsheet.html
- www.dnr.state.wi.us/org/aw/wm/publications/p2.utep.edu
- www.trojaninc.com/asl/factsht.htm
- www.nsc.org/ehc/ew/chems/mercury.htm
- www.epa.gov/glnpo/bnsdocs/hgsbook/abe.www.ecn.purdue.edu/~epados/mercury/pano/src/alternat.htm
- es.epa.gov (EnviroSense)
- www.elektro.com.br/institut/english/html/progilum.html

### *Government Listings*

#### U.S. EPA Region 5

##### P2 Hotline

⇒ 888/745-7272 (888-PIK-P2P2)

#### Illinois Environmental Protection Agency

##### Office of Pollution Prevention

⇒ 217/782-8700

#### Indiana Dept. of Environmental Mgmt.

##### Office of Pollution Prevention

⇒ 317/232-8172

#### Michigan Dept. of Environmental Quality

##### Environmental Assistance Division

⇒ 800/662-9278

#### Ohio Environmental Protection Agency

##### Office of Pollution Prevention

⇒ 614/644-3469

#### Wisconsin Dept. of Natural Resources

##### Cooperative Environ. Assistance

⇒ 608/267-9700

#### Minnesota Technical Assistance Program

⇒ 612/624-1300



United States Environmental Protection Agency  
Region 5  
Waste, Pesticides, and Toxics - WMB - DW-8J  
77 West Jackson Boulevard  
Chicago, Illinois 60604